

# How to Add Your Packages

CDAT is a collaboration. You can be part of the collaboration. You don't need permission or PCMDI's approval. You don't need PCMDI's programmers to add your algorithms. Here are descriptions of how to contribute packages the packages contributed to the "contrib" section of the CDAT source.

One of CDAT's strengths is that it is an open system. You can add your own software written in C, Python, or Fortran. The easiest way to learn to do this is to copy our examples. Get the CDAT source distribution and look for subdirectory 'contrib' in the top-level directory. The README file in contrib explains what to do.

There are tools that may be useful to you:

- ◆ The SWIG utility (Simplified Wrapper and Interface Generator, <http://www.swig.org>) can wrap C and C++ routines.
- ◆ Pyfort (<http://pyfortran.sourceforge.net>) connects Fortran routines to Python.

Depending on your needs, you may wish to use a layer of Python along with the automatically created interface, in order to make a nicer interface or to use the Fortran or C simply as computational engines. An example of this is the EOF package described below: it uses a Fortran linear algebra routine to enhance performance, but the "science" is in Python.

If you follow the protocols in 'contrib' then your package can be added to the PCMDI distribution as well. Just send it to us and be sure to include a README that explains:

- ◆ How to use the package.
- ◆ Contact information about the author.

You may also be able to generate useful documentation with the happydoc or pydoc utilities. happydoc works only on Python code; pydoc works on the installed modules. Both routines print help packages if executed with the argument, '--help', and both are already installed in your cdat 'bin' directory.

If you have the source distribution, use the README files in the subdirectories of the contrib directory for full documentation. Alternately, type:

```
% pydoc -w <name_of_package>
```

to create a web page showing the package's interface.